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Subject Today's monthly call agenda and Final Response to
 Comments

H10u4
 H4AR
 12.3.1
 8/7/07

Attached below is the agenda for today's 2 pm monthly call. Also attached is the revised East Waterway SRI/FS Workplan Response to Comments. We have updated the table based on EPA's comments, which were incorporated into the final SRI/FS Workplan. Changes since the last version are in redline.

Monthly Call Agenda

- Workplan Response to Comments
- Status of EISR
- Status of Source Control (MOA, status of evaluation approach memo, and tech team meeting)
- General schedule update
- Slip 27 data
- Upcoming EW projects (T-30)
- Boat cruise

Talk to you at 2 pm.

Call details:

Tuesday August 7, 2 pm

Conference call-in #: (b) (6)

Room #: (b) (6)

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Final Response to comments_7-19-07.doc

USEPA SF



1273969

Comments: East Waterway Operable Unit Supplemental Remedial Investigation/Feasibility Study Draft Work Plan

Comment No.	Page No.	Section No.	Comment	Category
1.	G	General	Throughout the SRI/FS decisions will be made regarding whether and how to adopt a LDWG approach and/or apply an EW-specific approach. Where specific sections of the work plan call for evaluation of LDWG approaches, please define the process proposed to conduct this evaluation.	2
			Response – Use of specific LDWG approaches will need to be assessed and potentially modified to be appropriate for the East Waterway Operable Unit, but it is premature to fully define the processes to be used since they may differ from LDWG approaches. We will define the processes in the appropriate future submittals.	
2.	1	1	Please elaborate, in bulleted format, on the key approach elements taken from the LDW work.	2
			Response – This topic will be addressed in the Conceptual Site Model (CSM) and detailed in other appropriate project documents.	
3.	1	1	Please change the last sentence of the second paragraph to read "For the purposes of the SRI/FS, the EWG will be referenced as the entity managing the project under EPA oversight."	1
			Response – The sentence will be revised as suggested.	
4.	1-2	1-2	Please clarify (and provide examples to illustrate) how results from concurrent remedial investigation tasks and feasibility tasks will be integrated. Please list specific examples of FS information that will be integrated into the SRI approach that may affect the scope of the SRI or risk assessments.	1
			Response – We will clarify this discussion. Please note that it may not be reasonable to try to fully clarify how SRI and FS information will be integrated since the timing of when data for SRI and FS will be collected and analyzed may differ than anticipated in the project schedule. We will attempt to better explain that the intent of our approach is to try to integrate FS information into the SRI phase as early as possible in order to help focus the required investigations and studies that may be needed.	
5.	4	1	Please provide a brief description of industries/facilities near the EW.	2
			Response – We will provide a brief general description in the Existing Information Summary Report (EISR).	
6.	4	1.1	Please provide a specific section in the report that describes the approach to be used to determine the final study boundaries for sediment, and the adjacent influence area for source control (including land area, groundwater, surface water runoff, etc.) Please cite the basis for the proposed northern and southern EW study boundaries and note for the purposes of the SRI/FS that these will be study boundaries only. For the southern boundary, please cite an LDW document that shows the LDW site boundary to ensure that the two study	1

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			boundaries do not overlap or leave any gaps. Please verify whether the southern boundary should be as illustrated in Figure 1-1, or extend directly across the channel to eliminate the small triangular sliver/area depicted in Figure 1-1. For the northern boundary, please note that the existing data report will contain relevant sediment sampling data north of the proposed boundary and discuss implications of the data related to the appropriateness of the boundary or state that a northern study boundary will be proposed in the draft summary of the existing information report, based on existing sampling data and bathymetry.	
			Response – We will describe in more detail in the Work Plan the approach used to define the study boundaries for sediment, and the adjacent influence area for source control. Figure 1-1 will be edited to correctly show the southern boundary. Sediment data that is outside of the EW study boundaries will not be discussed further in the Work Plan, but we will identify these data and discuss their relevance to the EW in the EISR and the CSM report.	
7.	5	1.1.1 - 1.1.3	Please describe remaining habitat more thoroughly, including shoreline areas in Slip 27, S of West Seattle Bridge and elsewhere. This description should enable the reader to evaluate whether sufficient intertidal habitat is present to evaluate feeding on benthic organisms by juvenile Chinook during high tides and spotted sandpipers during low tides. Please also provide a figure to identify the location and extent of intertidal and subtidal habitat currently present in the EW.	2
			Response – Information will be provided in the EISR and CSM.	
8.	5	1.1.2	Please discuss whether organisms that are capable of bioturbating sediments to a depth greater than 10 cm are present in sediments. Include the source and quality of this information. Presence of these organisms impacts the conceptual site model, and will be a consideration in the thickness of any potential sediment cap.	2
			Response – Information will be provided in the CSM.	
9.	6	1.1.4	1. Rather than limiting recharge, significant permeability is typically found through the "impervious" cover of areas such as this. Additionally, significant focused recharge can be found occurring at the limits of each "impervious" section. Please change this section to reflect this. 2. The shoreline armoring is unlikely to significantly retard discharging pollutants from developed upland plumes. It will make it more difficult to detect, due to mixing, but does not decrease the flux. If it is tidally influenced, as stated in this section, then the system is connected to the waterway and if plumes are present, they are discharging. Please change this section to reflect this. 3. The potential for focused discharge to the waterway through the backfill of utility trenches should be carefully evaluated. These trenches can act as drains from the uplands and deliver water to the waterway where the utility approaches the shoreline. From examination of the water-table maps of Harbor Island, this characteristic of the groundwater was particularly	1*

Comment No.	Page No.	Section No.	Comment	Category
			<p>evident before the well system was reduced during terminal expansion. Please add language to this section to address this.</p> <p>If soils below the pavement are contaminated, then groundwater can still carry contaminants into the East Waterway. Please articulate that areas with an impervious surface or adjacent to bulkheads will be evaluated as potential sources of contamination in this investigation. It could also be stated that subsequent determinations may be made that these sources are inconsequential, given supporting evidence.</p> <p>Please also provide reference(s) for groundwater data. Groundwater data will need to be evaluated for source control. Also, mention overland flow from impervious surfaces as a potential source of contamination.</p>	
			<p>Response – The word “impervious” will be removed from Section 1.1.4. This section is a general physical site description and is not intended to reach conclusions as to the impact of groundwater. We agree it is appropriate to note that existing groundwater information will be collected and evaluated in the EISR and CSM and will do so in the Work Plan. Groundwater data references will be compiled for the EISR but are not readily available for inclusion into the Work Plan and will require substantial effort to collect as part of the EISR.</p>	
10.	6	1.1.5	<p>Please discuss what is known regarding the depth and fluctuation of the saltwater and freshwater layers.</p>	1
			<p>Response – Information will be provided in the EISR.</p>	
11.	7	1.1.6	<p>2nd Paragraph. Please define “extreme high flow” with respect to flood event. The flow presented is less than a 2-year flood event, indicating this is not necessarily “extreme”.</p>	2
			<p>Response – Information will be provided in the EISR. Work Plan text will be modified to clarify that the flow presented is not an extreme event.</p>	
12.	7	1.1.6	<p>3rd paragraph. Please provide the reference for the statement that sedimentation rates were significant prior to the 1920s.</p>	1
			<p>Response – This is a general observation based on review of historical USACE bathymetric condition surveys, but not based on a scientific study. The sentence will be modified to reflect that this is a general observation that will need to be verified.</p>	
13.	7	1.1.6	<p>While the document states that the Green River is the primary source of sediments to the EW, it does not discuss any secondary sources. Please discuss whether overland stormwater flow (or other sources) transports some portion of sediment (and contaminants) to the EW.</p> <p>Please also expand on comparative EW loadings of sediment from the Green River relative to sediments from Elliott Bay or other sources.</p>	2
			<p>Response – Additional brief discussion will be provided in the EISR and the CSM. The intent of the Work Plan discussion was to provide a brief overview of sediment transport</p>	

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			<i>issues. Please note that there may be very little accepted literature on the topic of secondary sources, or the potential sediment load from Elliott Bay.</i>	
14.	7	1.1.6	Please add a description of the number of stormwater outfalls and CSO discharge locations.	1
			Response – A brief general description will be added. More detailed information will be presented in the EISR.	
15.	7-8	1.1.6	The text suggests that upstream physical constriction at Spokane Street has limited flow and decreased sedimentation, then states that water depths have decreased from 60 feet to less than 40 feet (considerably less than 40-foot mud line depths from -13 to -6 are cited on pg. 4). As written, this statement seems contradictory. Please restate to clarify.	1
			Response – The information presented is based on review of historic USACE condition surveys. The text will be revised to remove statements that potentially could be interpreted as conclusions.	
16.	8	1.1.7	Please summarize the footprint (including a map), depth, and timing of recent dredge events in this section or add text that this will be done in the Existing Information Summary Report.	2
			Response – Information will be provided in the EISR. We will note this in the Work Plan.	
17.	11-18	2	Please include a figure or set of figures (by data type) delineating the studies and (where appropriate) sampling locations summarized in Section 2.	2
			Response – We believe this information is not appropriate for the Work Plan. This information will be provided as a set of figures in the EISR.	
18.	11-18	2	For this section, maps and tables should be included that clearly show the entire history of the East Waterway (since 1983, or before) with all historic surface and subsurface sediment sample results, groundwater results, toxicity, biota, and CSO sediment and water quality results clearly detailed.	2
			Response – We believe this information is not appropriate for the Work Plan. A detailed discussion of the historical sample results will be provided in the EISR.	
19.	11-18	2	Please identify the general criteria that will be used to evaluate the data.	1
			Response – Sections 3.1.1 and 3.1.2 describe the categorization of data and the data quality objectives for evaluating the data. Please refer to responses to comments for those sections.	
20.	11-18	2	Please create a subsection to focus on upland information (historical uses) and data (soils and groundwater data) to describe information regarding Harbor Island and the use of the east side of the waterway (such as T-108). This section will be useful to inform subsequent efforts such as sampling plans and source control.	2*
			Response – Appropriate information will be provided in the EISR, including background on how the EW OU relates to the Harbor Island site. EPA and EWG will discuss the appropriate	

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			level of detail for the upland and groundwater data, given that EPA has approved upland cleanups and given that the Harbor Island Soils and Groundwater Operable Unit is in the long-term monitoring phase.	
21.	11	2.1	The work plan states that data from past sediment removals under the DMMP will not be included in the RI sediment database. This information must be included because it may be useful in understanding contaminant inputs to the waterway by comparing the historic surface concentrations to the existing surface concentrations. It may also be a valuable contribution to the source control effort. For practicality, these data should be flagged as dredged sediments so that data queries can include or exclude this information as appropriate. Also, if Z samples were collected during the DMMP evaluation process, these chemistry results should also be included.	2
			Response – The first paragraph in Section 3.1 describes how all historical data will be retained and used. Additional language will be added to the work plan to clarify the difference between the dataset used in the RI and the EW database.	
22.	11	2.1	Please include some brief summaries of results (COCs and concentrations) in bullet format to familiarize the reader with known overall East Waterway concerns.	2
			Response – Information will be provided in the EISR.	
23.	13	Table 2-1	Please make reference to cores and surface grabs collected mid-project at Slip 36 (GeoEngineers) to delineate DMMP-suitable material.	1
			Response – These cores and surface grabs will be included in Table 2-1.	
24.	13	Table 2-1	Please flag investigations of sediments that have been dredged.	1
			Response – Investigations of sediments that have been dredged will be flagged in Table 2-1.	
25.	14	2.2	Please indicate that unpublished data (from EVS) will be validated and published as part of the administrative record.	3
			Response – The data has been obtained and will be reviewed and validated in the Historical Data Review Memorandum that will be an appendix to the EISR.	
26.	14	2.2	Please include a brief summary of results (COCs and concentrations) in short bullet lists to familiarize the reader with the overall (preliminary) site concerns.	2
			Response – Table 2-2 summarizes all detected analytes with minimum and maximum concentrations. Further detail will be provided in the EISR.	
27.	17	2.3	Please provide table(s) and figure(s) to summarize water chemistry data.	2
			Response – Information will be provided in the EISR.	
28.	17	2.3	Please include a separate section to describe the “available, porewater, groundwater, and seep data” that will be summarized in the existing data summary report. This information does not	2

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			belong in a section that is entitled "surface water chemistry". Please provide citations for these data as provided in previous sections. Porewater data from earlier DMMP characterizations need not be included; however, this should be stated explicitly in the work plan.	
			Response – We will add a note to this section to indicate that available porewater, groundwater and seep data will be summarized in the EISR. This type of information is not readily available and will require significant effort to locate and compile it, thus we propose not citing references to this information in the Work Plan in order to avoid delaying the completion of the Work Plan. Detailed information will then be provided in the EISR. We will review the Work Plan to make sure that the Work Plan is clear that we intend to compile existing information in the EISR. We will change the section title, "Surface Water Chemistry" to "Water Chemistry Data."	
29.	18	2.4	Please discuss available information on benthic community indicators such as richness and abundance. Please describe SPI data along the EW and adjacent water bodies, if available.	2
			Response – Information will be provided in the EISR.	
30.	18	2.4	Please provide summary table(s) and figure(s) to summarize benthic data.	2
			Response – Information will be provided in the EISR.	
31.	19	3	Please include a section describing the process to define the COPC list for EW and subsequently identify the chemicals of concern (COCs). This section should discuss how the process is consistent (although not necessarily identical) with approaches used on the LDW.	2
			Response – The information requested in this comment will be addressed in the Risk Assessment Technical Memoranda (RATM). This information will be stated in the work plan.	
32.	19	3.1	This section articulates that data excluded from the SRI/FS dataset will be retained in the database and may be used to identify potential contaminants of concern. Please state in the workplan that all data will be maintained in the dataset. Data may be sorted as needed for different purposes.	1
			Response – Comment accepted.	
33.	19	3.1	Please articulate what is meant by the "relational database" mentioned in the first sentence (ESRI, Query Manager, other?).	1
			Response – Relational database will be defined.	
34.	19	3.1	Please describe that the "Existing Information Summary Report" will identify the criteria (both general and specific) to evaluate data.	1
			Response – The EISR will identify all criteria used to evaluate data. DQOs are provided in Section 3.1.2 of the Work Plan.	

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35.	19	3.1	Please include a description of what is probable/likely/expected in the future in the discussion of the physical, ecological and human-use characteristics of EW. Tribal uses and treaty rights should also be included.	2
			Response – Discussion will be provided in the CSM.	
36.	19	3.1	3rd element: Please add that properties outside the area immediately adjacent to the waterway will be identified. The extent of the upland property owners identified will include all those relevant to the SRI/FS. Please describe the process proposed to define this boundary.	2
			Response – Major properties outside of the area immediately adjacent to the EW and that potentially affect the source control evaluation will be generally identified in the EISR and discussed in more detail in the Source Control Evaluation Approach Memorandum. The process to define the extents of area associated with source control will also be discussed in that memorandum.	
37.	20	3.1	4th element: "...contamination in all EW environmental media. ..." Please include groundwater in this list of EW environmental media.	1
			Response – Groundwater will be added to the list of environmental media.	
38.	20	3.1	4th element: There is significant uncertainty in determining which upland data are relevant to the SRI/FS. Although a determination may be made that the data are not relevant, please articulate that a brief summary of these datasets and the reasons why they are not included will be provided. Please discuss the process proposed to evaluate which upland data are deemed to be "relevant" and identify specific criteria to evaluate "relevance." Please make upland data a separate element under the EISR.	2
			Response – Upland data and their relevancy to Source Control evaluation will be addressed in the Source Control Evaluation Approach Memorandum. Detailed information on existing upland site data, including groundwater data, cross sections, and information on the remedial activities as they relate to transport pathways affecting the EW will be presented in the EISR.	
39.	20	3.1	4th element: A brief summary of the nature and extent of contamination that is functionally adjacent to the EW study boundaries (Lower Duwamish, north end of the EW, Elliott Bay, etc.) should be included in this section.	1.
			Response – A brief summary will be provided in the Work Plan.	
40.	20	3.1	4th element: The "sand layer" from the phase 1 removal action should be identified as an interim remedy implemented after post-dredge monitoring.	2
			Response – Comment is noted and the EISR will describe the sand cover as an interim remedy.	

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41.	20	3.1	4th element: Please articulate that data will be compared to other literature guidelines (in addition to SMS and PSDDA) developed for the protection of aquatic species (e.g., Meador et al., 2002. Determination of a tissue and sediment threshold for tributyltin to protect prey species of juvenile salmonids listed under the US Endangered Species Act. Aquatic Conserv: Mar. Freshw. Ecosyst. 12 pp493-516.). Please discuss the process to evaluate the relevant guidelines and consider a range of values to determine what is protective for East Waterway.	2
			Response – For the purposes of the EISR, only SMS and PSDDA will be used. An evaluation of relevant guidelines (including ACGs derived for the LDW as relevant) will be discussed in the Data Gaps analysis, the QAPPs and the RATM.	
42.	20	3.1	7th element: Care must be taken not to exclude data based upon QA considerations when evaluating source control. Please articulate that poor quality data that reflect potential sources will be identified, at a minimum, as data gaps to be filled.	2*
			Response – The highest level of QA review will be conducted for data included in the risk assessments. Source control data will not be excluded unless serious data quality concerns are present. We do not agree that “poor quality” data will be identified as a data gap without further information as to how “poor quality” will be defined.	
43.	20	3.1	7th Element: Please coordinate the process and rationale for reviewing the quality of available data with what is being described as DQOs in Section 3.1.2. These sections should be consistent.	1
			Response – Comment accepted.	
44.	20	3.1	Please identify that the Hydrology section in the Existing Information Summary Report will include three sections to address the following: 1. Hydraulics applicable to the river including flows and tides. 2. Hydrology including precipitation, surface water drainage area that impacts the EW, outfalls, runoff rates and outfall flow rates and stormwater/CSO discharge data, etc. Please discuss the east and west sides of the EW separately. 3. Hydrogeology including major fill zones based on historical records from construction of the waterway, regional aquifers, flow directions, background concentrations, known/listed contaminated soil/groundwater sites (including on Harbor Island) along with known/suspected COPCs and concentrations, existing groundwater wells near the river (per Ecology files), specific local GW data (including flows, seasonal variations, and contaminant concentrations) from any available studies including the Harbor Island groundwater monitoring well network, etc. Please discuss the east and west sides of the EW separately and identify regional groundwater flow boundaries. Refer to groundwater flow barriers, such as sheet pile walls, that are identified in the EW structures survey.	1*
			Response – We will identify in the Work Plan that the Hydrology section in the EISR will include three subsections, including: Hydraulics, Hydrology, and Hydrogeology. However, we do not agree that there is a need to provide detailed description of content of those	

Comment No.	Page No.	Section No.	Comment	Category
			subsections in the Work Plan.	
45.	20	3.1	Please state that a river profile and 3 or 4 cross-sections will be provided in the Existing Information Summary Report that identifies land and sediment surface elevations and the range of river stage and tidal levels. The cross-sections should identify subsurface geology and stratigraphy based on regional literature data supplemented by EW-specific data where available.	3
			Response – River stage information is not appropriate to the EW as the EW is tidally controlled. Further detail on tides, as well as typical cross sections, will be provided in the EISR. Subsurface geology and stratigraphy will be included if available information exists.	
46.	21	3.1.1	Please describe more clearly what is meant by Category 1 and Category 2 data.	1
			Response – Category 1 and 2 data will be further defined in Section 3.1.1.	
47.	21.	3.1.1	<p>It would be very helpful to see the database in its current form. Database structure and data fields are critical to efficient use of the data for risk assessment and graphical display. Early in the process is the time to decide on how best to build the database. Please state that the database structure will be presented no later than with the initial draft EISR.</p> <p>Please explain the purpose for dividing the data into two categories and its usefulness for this project. Because some of these data types vary over time, they should be considered for inclusion into the relational database. Examples of data that vary over time include bathymetry, which changes due to dredging and other events, abundance and distribution of biota, and fish histopathology and biomarker data.</p> <p>Please explain why risk assessment data would not be used in a relational (GIS?) database. Assuming that "Category 1" data mean GIS, some of the Category 2 data may be useful in a GIS, where geospatial information is associated with the data. Please add an explanation why Category 2 data is not suitable for a relational GIS database. If no reason exists, then the Category 2 data should be added.</p>	1*
			Response – A data management memorandum will be prepared with the EISR that provides detail on database structure and datafields. The distinction between Category one and two will be more clearly described in 3.1.1. GIS analysis is not limited to Category 1 data.	
48.	21	3.1.1	In addition to the aquatic community and specific aquatic organisms, please state that additional wildlife lifestage information will be included with the Category 2 data. For example: distance to known blue heron rookeries, EW feeding areas for nesting Great Blue Heron (which would effect their exposure characteristics), EW seasonal use by bird species (including lifestage), EW presence and/or use of other wildlife (including river otters).	1
			Response – Additional wildlife data will be included in the Category 2 data.	
49.	21	3.1.1	8th bullet: Please add Tribal use.	1
			Response – Tribal use will be added.	

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50.	22-27	3.1.2.#	Please add subsection titles to the individual subsections that mention "data quality objectives," for example: "3.1.2.1 Event Level Data Quality Objectives."	1
			Response – Subsections will be amended.	
51.	22	3.1.2	When deriving the DQOs, please use the EPA 7-step process presented in <i>Guidance on Systematic Planning Using the Data Quality Objective Process</i> (G-4) [EPA February 2006].	2*
			Response – The Duwamish DQOs and DQO process will be utilized as much as possible to efficiently derive DQOs consistent with EPA Guidance. Guidance document will be cited in the work plan.	
52.	22	3.1.2.1	In addition to the data report, the hard copy or electronic copy of raw data must also be available for future QA2 data validation/verification. Based on the summary of previous investigations conducted on the EW and the minimum QA/QC requirement, QA1 data review may have been conducted on most of the EW datasets especially those supporting DMMP. QA1 data review is a very limited data quality evaluation using only the holding times and summary of QA/QC results criteria. Calibrations, instrument performance, and raw data verifications are not included in QA1 data review. The LDW project required a QA2 data quality assessment for the RI/FS. For EW datasets that only have QA1 review and will be used in the EW RI/FS will need to undergo a QA2 data review/validation. Please also revise Footnote 1 to articulate that QA2 data validation will be verified/conducted for this project. To be able to conduct a QA2 data review, sample, QA/QC, and instrument raw data outputs must be verified with the reported results.	1
			Response – Following a conference call with EPA on March 22, 2007, the footnote text has been revised.	
53.	23	3.1.2.1	The bullet seems inaccurate, since pre-1996 subsurface data will be used. Please revise the title to indicate that data will be evaluated for recency and relevance.	1
			Response – Bullet will be revised.	
54.	23	3.1.2.1	Under "Data... collected since 1996": Please include criteria to identify whether core data applies to material that was removed or exposed by subsequent dredging projects.	1
			Response – Further clarification will be provided.	
55.	23	3.1.2.1	Data collected before 1996 may be useful in identifying sources of contamination and should be retained for possible use in source control. Likewise, dredging events older than 10 years should be documented to (potentially) aid in interpretation of sediment transport and source control. Please revise the text accordingly, and describe the process proposed to evaluate whether data are relevant for specific applications.	1
			Response – The evaluation process for historical events will be further discussed.	

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56.	24	3.1.2.1	The top section of a core sample does not necessarily represent surface sediment or the biologically active zone. Please state that the rationale for accepting or rejecting surface sediment data based upon sampling method will be provided.	1
			Response – The surface sediment or biologically active zone will be defined in the CSM. Sediment data will be reviewed in light of that definition in the data gaps analysis.	
57.	25	3.1.2.2	The text indicates that data from "co-located" samples will be examined on a case-by-case basis, and older data that is not representative will be "qualified". This approach implies knowledge of what concentrations at a given location "should be". In fact, such determination will be difficult. Contaminant concentrations can vary significantly over relatively short distances (less than the 15 feet indicated in the text). Please indicate that unless the case-by-case comparison is very clear, "co-located" samples as defined in this section will be retained in the database. Various methods for spatial weighting can be used to define exposure-point concentrations using such data.	2
			Response – Collocated samples will be dealt with in a manner consistent with the protocols developed for the Duwamish. Samples that are within 10 ft of one another are considered co-located. The data for both samples is retained in the dataset with the preferred result is flagged.	
58.	25	3.1.2.2	Some independent evaluation of reference areas/stations should be included. Please articulate that additional EW characterizations will document reasonable rationale in support of the proposed reference sediment locations. Difficulties that were encountered with references locations during previous characterizations should be identified and rectified in the SRI field investigations as appropriate.	4
			Response – QA issues with previous sediment bioassays will be identified in the EISR.	
59.	26	3.1.2.3	3rd bullet: "details of subsampling methods..." Please pull this out as a separate sample level DQO, and provide additional description.	1
			Response – The text was deleted after further review determined that it was not a relevant DQO.	
60.	27	3.1.2.4	The degree to which RLs meet risk-based analytical concentration goals should be identified. This will require preliminary development of exposure pathways. This analysis is relevant to both human and ecological risk assessment.	1
			Response – Exposure pathways will be developed in the CSMs developed for human and ecological receptors. RLs will be evaluated in QAPPs with regard to risk-based ACGs. This text will be included in the work plan.	
61.	27	3.1.2.4	Please clarify whether RLs, DLs or some combination will be incorporated into the database.	1
			Response – Both RLs and DLs are retained in the database. Text will be amended to reflect	

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			<i>that.</i>	
62.	27	3.1.2.4	1st paragraph under "Calculated values...": Please state that the "LDW summation rules" will be articulated in the EISR.	1
			Response – Comment accepted.	
63.	27	3.1.2.4	Add cPAH totals to "(e.g., total PCBs...)". Ecology's SMS PCB summation rule notes that the sum of all detected Aroclors or the highest un-detected Aroclor will be used to develop total PCB concentrations. EPA has been using the sum of detected Aroclors and 1/2 the detection limit for Aroclors found anywhere at a site to characterize human health risks. Please articulate that computation of total PCBs using the EPA approach will accompany the Ecology SMS approach to permit comparison of risks using each method.	3
			Response –LDW used Ecology's SMS summation rules for both the ERA and HHRA. In Portland, the EPA approach was used for both risk assessments. We would prefer to identify one summation rule in order to simplify data management. A comparison of Aroclor totals and congener totals for the Duwamish tissue samples has been conducted and the LDWG summation rule for Aroclors resulted in good with the congener sums. An analysis of the existing data can be conducted to determine the significance of the differences between the methods. Per discussion with EPA the Ecology SMS PCB summation rule will be used following verification of the sums based on the congener sums.	
64.	27	3.1.2.4	Results need to be averaged by location in a separate database table. This allows for EPA analysis of data without having to do additional computations from raw data.	1
			Response – A separate database table will be added to contain results averaged by location. This will be similar to the approach used by LDW.	
65.	28	3.1.2.4	The text suggests that it will be possible to determine which of two analyses by different methods is "correct" and, therefore, should be retained in the database. Reality is that two analyses by the same method can be substantially different and it is seldom possible to determine which of these analyses is "correct." Unless the case is absolutely clear, any valid data should be included in the database, with appropriate identifiers, so that decisions can be made later on about if and how to use the data for development of exposure-point concentrations.	4
			Response –Data management rules will be consistent with those used in the Duwamish. Rejected results are retained in the database but are flagged as rejected.	
66.	28	3.1.2.4	The text indicates that only validated data will be incorporated into the database; however, it is critical to consider end use of data carefully before elimination from the database. Please discuss possible applications for unvalidated data: estimate exposure-point concentrations, risk assessments, and uncertainty analysis.	3
			Response – Only validated data will be used in the risk assessments. Data that cannot be	

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			fully validated will be included in the database and can be used for source control and nature and extent sections of the RI.	
67.	29	3.2	Please indicate that the CSMs will integrate (to varying degrees) information on contaminant sources. Ideally, a single CSM is developed over the course of the project that provides a complete representation of the EW, including sources, releases/pathways, receptors, physical processes, land uses, habitat types, etc. The sophistication and data requirements of the CSM(s) will depend on decision criteria.	2*
			Response – Further discussion will be required to determine the level of sophistication required for the CSMs. The CSM will identify receptors in order to conduct data gaps analysis and design sampling efforts as well as text describing the framework of how CSMs will be used and updated throughout the RI process.	
68.	29	3.2	The CSM should provide an integrated overview of the current understanding of the EW, although there may be ecological and human health components. Please verify that the work plan reflects that the CSM is an iterative and dynamic planning tool that forms the basis for appropriate data collection and is refined through the incorporation of new data.	1
			Response – Text will be revised to address comment	
69.	29	3.2	This section makes it look like there will be 3 CSMs. Please clarify whether this is true, and if so, please describe the link between the physical CSM and those for risk.	1
			Response – Text will be revised to address comment.	
70.	29	3.2.1	Please include bioturbation as a physical process to be evaluated.	1
			Response – Bioturbation will be considered.	
71.	29	3.2.1	Please ensure that the conceptual site model has a 3-D representation since it will be difficult to assess the adequacy of work plans, sediment sampling plans, site conceptual models, and cleanup plans without a clear 3-D understanding of the nature of the East Waterway.	2
			Response – The CSM reflects three-dimensional processes. Further discussion with EPA will be required as the RI progresses to determine the level of detail appropriate in the CSMs.	
72.	29	3.2.1	There should be a separate section that describes the available porewater, groundwater, and seep data that addresses the information from the Harbor Island soils and groundwater operable unit as well as pore water data collected as part of past dredging activities. Please provide citations for these data as provided in previous sections. Please add to the discussion that upland-sourced groundwater flux into and through the sediment package should be included in the evaluated physical processes. Please mention that groundwater should be monitored for the entrainment of SVOCs and PAHs and their potential sorption into sediments by discharging groundwater. Also assess the effect of focused upland groundwater	3

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			discharge through pipe backfill for utility corridors and the utility chase backfill which approach the shoreline.	
			Response – We disagree with several of the comments, particularly those that conclude that specific monitoring is required. Existing information needs to be first collected (in the EISR) and evaluated (CSM and data gaps analysis) before determining that specific monitoring, field investigations, or studies are required. We will summarize existing information on groundwater, porewater, and seep data in the EISR and discuss our proposed approach to evaluate source control (including potential groundwater impacts) in the Source Control Evaluation Approach Memo. Language will be added in the Work Plan stating that hydrogeologic processes will be included in the CSM.	
73.	30	3.2.1	Please indicate that the conceptual site model will include a discussion of the extent to which seismic or tsunami events may redistribute or expose site sediments.	3
			Response – The extent to which seismic and tsunami events affect site sediment distribution depends greatly on the magnitude of the event. The CSM will acknowledge that such events may redistribute or expose site sediments, but will not attempt to provide any quantitative or qualitative estimates of the effect. The effects of seismic and tsunami events may need to be taken into account during remedial design, but likely will not affect evaluation and selection of remedial alternatives.	
74.	30	3.2.1	3rd bullet under "information that will be researched...": Please revise the text such that the investigation is not limited to "typical vessels." Research will be needed of Port (and other) records of larger vessels that have visited the Port or could be expected to visit the Port in the future, which will impact bottom sediments, local currents, etc., to a greater extent than the "typical" vessel.	1
			Response – We will modify the text to state, "...from existing and anticipated likely future vessels that may use the EW."	
75.	30	3.2.1	Please include a bulleted list of physical processes to be considered. Include the processes described in the text of 3.2.1, but also include: wind transport of particulates, extreme precipitation events, groundwater flow, seismic concerns, tsunamis, anchors, etc. Some of these may be determined (later) to be beyond the scope of the SRI/FS, but this should be articulated in the CSM report.	2*
			Response – We will provide additional processes that can reasonably be considered to affect the CSM. Language will be added to the WP that states that all of the processes listed above have already been examined. Text will be included that states the reason for not evaluating the process further, or the general approach for handling the process if further evaluation is required. However, we do not agree with the approach to list all conceivable effects that potentially could occur. Based on our preliminary discussions with EPA, we understand that EPA agrees with the project approach to focus efforts in order to expedite completing the SRI/FS	

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			<i>and therefore we should only consider reasonable inputs into the CSM.</i>	
76.	30	3.2.1	Please draw a link from the "Physical Processes in East Waterway" back to Sediment Transport and the "questions that arise from the CSM" [3.7.3 Identify Data Gaps].	1
			<i>Response – Physical processes that affect sediment transport and stability are incorporated into the CSM.</i>	
77.	30	3.2.1	Second paragraph states that storm drains and CSOs discharge into the EW, adding sediment and contaminant load. Please identify the relationship between stormwater outfalls, CSOs, and existing and future intertidal sediment to identify the potential for recontamination of this media.	2
			<i>Response – These relationships are part of the source control evaluation and conclusions should not be made in a Work Plan regarding how each component affects potential for recontamination. The Work Plan will be updated to state that "The process to evaluate potential sources will be identified in the Source Control Evaluation Approach Memo."</i>	
78.	30	3.2.1	The discussion of sediment transport needs to incorporate the findings of the LDW sediment transport study. Sediment transport processes must be understood within the larger context of the entire waterbody system, as well as within the EW specifically. In addition, please relate sediment transport to contaminant nature and extent in order to begin evaluating potential remedial alternatives. Recontamination sample data should be used to evaluate assumptions and conclusions regarding sediment transport and effect on waterway contamination as appropriate. Please verify that the work plan articulates these objectives.	1*
			<i>Response – The Work Plan intent is to incorporate the LDW sediment transport study where applicable. We do not necessarily agree that recontamination sample data can be effectively used to make a case for or against recontamination potential since there are several physical processes that affect sediment transport within the East Waterway. The Work Plan will be updated to indicate that the existing sample data set will be used to inform the STEM or CSM about recontamination.</i>	
79.	30	3.2.1	There was no mention of groundwater in the risk assessment itself. Please indicate that the CSM will account for the possible direct risks from groundwater/transition zone water to benthic organisms and to localized water quality in discharge zones. This is in addition to groundwater possibly being a sediment recontamination concern.	2*
			<i>Response – We assume that the comment is referencing Section 3.2.2 describing the ERA CSM. No specific pathways of exposure are presented in the workplan. All pathways of exposure will be discussed in the CSM. The summary of existing groundwater data in the EISR will also be critical in determining the relevance of this issue.</i>	
80.	30	3.2.2	Please delete text referring to discussion of specific exposure pathways for quantitative evaluation. This level of detail should not be included in the work plan.	1
			<i>Response – Text will be deleted. Specific exposure pathways will be identified in the CSM</i>	

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			documents.	
81.	30	3.2.2	Please correct the sentence to state, "This section presents the approach to develop the CSM for the EW..."	1
			Response – The sentence will be revised as suggested.	
82.	31	3.2.2	Please include the text, "Once reviewed and accepted by EPA as applicable for the EW," in front of the statement, "The LDW ecological CSM can be used as a starting point..."	1
			Response – The suggested text will be included.	
83.	31	3.2.2.2	Please re-write the first paragraph in this section and eliminate any preliminary assessment of appropriate Receptors of Concern. This paragraph should describe the process through which the Conceptual Site Model will identify the Receptors of Concern to be used in the Ecological Risk Assessment. It should also say that the CSM will begin by evaluating the applicability of utilizing the Receptors of Concern selected for the Lower Duwamish Waterway Superfund Site, because it is adjacent to this site.	1
			Response – Comment accepted.	
84.	32	3.2.2.2	The text should indicate that the LDW ROCs are proposed, but have not been accepted by EPA.	3
			Response – The Draft final ERA has been sent to EPA. The receptors were accepted by EPA when the LDW Phase 2 Work Plan was approved. The text will be revised to reflect this understanding.	
85.	32	Table 3-1	Modify this table to only list the Receptors of Concern utilized for the Lower Duwamish Waterway Superfund Site (i.e., delete the other two columns in the Table) and mention that the Eco-risk technical memo will address the ROC's relevance to the EW with the appropriate habitat information with maps and figures to support proposed ROC.	2*
			Response – The table will be modified. However, the ROCs will be identified in the CSM in order to conduct Data Gaps Analysis and QAPPs. Habitat information will be provided in the EISR and CSM.	
86.	33	3.2.2.4	"Threatened" and "endangered" are not indications of the "perception of value by humans" as indicated in the text, but are an indication of the "danger of extinction throughout all or a significant portion of its range." Please clarify this statement within the work plan. Also clarify how an assessment endpoint will be selected based on "societal values".	1
			Response – Text will be clarified.	
87.	33	3.2.2.4	The description of selecting assessment/measurement endpoints needs to be re-written to identify any guidance documents that will be used to establish each endpoint type, and to describe the actual process to gain stakeholder consensus for them. If the EWG plans to build on the LDW ERA process, then they need to so specify and/or establish a process to modify previous studies. The	2*

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			measurement endpoints process description should also specify/describe how SLVs will be selected to assess the various exposure pathways identified in the CSM.	
			Response – This comment was confusing. We are not clear what is being referred to in terms of “a process to modify previous studies”. Further detail on the development of assessment and measurement endpoints will be provided in the CSM documents.	
88.	33	3.2.2.4	<p>Making a distinction between population-level and individual effects based on the level of protection to provide a species is an important consideration. However, the method by which these two levels of protection are afforded needs further clarification. The example provided is one such method, but the work plan needs to present the process by which population versus individual effects will be described and evaluated so that EPA and stakeholders can comment.</p> <p>Please provide clarification within the text to respond to questions such as: How will we deal with the ambiguity regarding analysis of individuals vs. populations of endangered species using the EW? How will we sort out endpoints to decide whether there is enough protection/benefit offered to other species/entities/habitat? Are there some suggestions as to how we might sort out whether to use NOAELs or LOAELs? Would one make more sense at an estuarine site like EW, as opposed to the upland sites cited in the text?</p>	2
			Response – Information will be provided in the RATM. Text will be added to the work plan which delineates the process to be used to evaluate population vs individual effects.	
89.	33	3.2.2.4	Please provide the appropriate reference from the Coeur d'Alene and Blackbird mine Superfund sites regarding the emphasis placed on the NOAEL.	1
			Response – Reference will be added.	
90.	34-39	3.2.3	This section of the work plan is too detailed with regards to the relevance of LDW exposure pathways to the EW and should be reserved for actual development of the CSM. The discussion regarding the development of exposure scenarios for water, sediment, and seafood consumption should only address the process from which these exposure scenarios will be developed and evaluated.	1
			Response – The discussion of exposure pathways will be removed and presented in the CSM. A discussion of the process for development of exposure pathways will be added to the Work Plan.	
91.	34	3.2.3	First Paragraph: Please delete the last sentence in this paragraph. It is not appropriate for this draft work plan to discuss/evaluate relevant exposure scenarios. Such a discussion is more appropriate for the actual risk assessment deliverables.	2
			Response – This topic will not be addressed in this level of detail in the Work Plan. The comment will be addressed in the CSM deliverable. Language will be added to the Work Plan stating that the relevancy of pathways will be discussed in the CSM deliverable.	

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92.	34	3.2.3.1	Typically, incomplete exposure pathways are included in the CSM and qualitatively evaluated in the risk assessment as part of pathways analysis. Please clarify in this section that such an approach is planned.	1*
			Response – Incomplete pathways will be identified in the CSM and discussed in the pathways analysis, but not evaluated in the risk assessment. By definition, the risk associated with an incomplete pathway is zero. The Work Plan text will be revised to indicate that the CSM deliverable will include a table identifying complete and incomplete pathways..	
93.	34	3.2.3.1	The text indicates that complete but insignificant pathways will not be quantitatively evaluated. Though this approach is sometimes appropriate, it can be more transparent to the public to carry such pathways through the assessment and demonstrate their lack of significance compared to other pathways. Other possibilities include example "worst case" calculations for some pathways, or comparison of exposure-point concentrations and risk estimates for identical pathways from LDW or other nearby risk assessments. Please revise the text accordingly.	2
			Response – Text will be revised to discuss possible approaches for evaluation of insignificant pathways. Text will be added that there will be discussions with EPA and its partners about which pathways will be quantitatively evaluated. Approaches for specific pathways will be described in the CSM deliverable.	
94.	35	3.2.3.2	First Paragraph: Please delete the last two sentences in this paragraph. It is not appropriate for this draft work plan to discuss/evaluate relevant exposure scenarios.	1
			Response – This topic will not be addressed in this level of detail in the Work Plan. The comment will be addressed in the CSM deliverable.	
95.	35	Table 3-2	Please remove table 3-2 (and all associated references to the table) from the SRI/FS work plan. This table can be proposed during the Human Health Risk Technical memorandum.	1
			Response – This topic will not be addressed in this level of detail in the Work Plan. The information will be presented in the human health risk assessment technical memorandum and also the CSM.	
96.	36	3.2.3.2.1	The work plan discusses possible exposure pathways associated with surface waters for the EW by comparison of EW characteristics with the LDW. This analysis may well be correct; however, missing is a discussion of the relative magnitude of contaminant levels in the two areas. If EW has significantly higher levels of contaminants, risks for some scenarios (e.g., swimming) could be higher than expected based on relative exposure frequency between EW and LDW. Please revise the work plan to eliminate conclusions regarding potential pathways, and instead focus on the process by which these pathways will be evaluated.	2
			Response – Identification of exposure pathways will be discussed with EPA and its partners and presented in the CSM deliverable and human health risk assessment technical	

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			memorandum. A sentence will be added to the Work Plan indicating this.	
97.	36	3.2.3.2.1	Please cite a reference for the first sentence stating that frequency of swimming at EW is likely to be low. If the King County study is the reference, rephrase the sentence so that it is clear to the reader that this is the source of the statement.	1
			Response – Statement will be altered to say that the frequency of swimming in EW is unknown.	
98.	37	3.2.3.2.1	Surface water risks should be included in this section from the standpoint of risk communication.	2*
			Response – Will discuss with EPA and its partners which pathways will be quantitatively evaluated. The specific approach will be described in the CSM deliverable. An approach using swimming risk estimates from the King County (1999) study might be acceptable.	
99.	37	3.2.3.2.2	Please acknowledge in this section that people can access the river near the Spokane Street Bridge near the public access street end sites.	1
			Response – Text will be revised	
100.	37	3.2.3.2.2	Second paragraph: Please change first sentence to read: Muckleshoot Indian Tribe.	1
			Response – Text will be revised	
101.	37	3.2.3.2.2	Last paragraph: Please delete the “may” with regard to Tribal fishermen. Fishermen do contact sediments and surface water during fishing activities.	1
			Response – Text will be revised	
102.	37	3.2.3.2.2	Similar to an earlier comment related to surface waters, the work plan discusses possible exposure pathways associated with sediments for the EW by comparison with site characteristics in the LDW. This analysis may well be correct; however, missing is a discussion of the relative magnitude of contaminant levels in the two areas. If EW has significantly higher levels of contaminants, risks for some scenarios (e.g., beach play, occupational exposures) could be higher than expected based on relative exposure frequency between LDW and EW. Please revise the text to incorporate the above and to eliminate any suggestion that any pathways be eliminated from consideration or offer conclusions regarding their relative significance.	1
			Response – The Work Plan text will be revised to indicate a process for CSM development, which will include consideration of significance of pathways. The full discussion will be presented in the CSM deliverable and human health risk assessment technical memorandum.	
103.	38	3.2.3.2.2	Please do not assume that workers do not contact water and/or sediment in the work plan. Instead, focus on the process to make this determination. A survey of longshoremen and/or their union would be a way to verify whether workers are exposed to sediment. Other expedited measures may be proposed as an alternative to the longshoremen survey.	2*

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			Response – We will discuss with EPA and its partners which pathways will be quantitatively evaluated and how to develop those evaluations. A sentence will be added to the Work Plan stating that the specific approach will be described in the CSM deliverable.	
104.	38	3.2.3.2.2	The LDW HHRA has been modified to include a greater number of exposure scenarios (e.g. beach walkers, childhood beach play). This has been done to address public concerns about risks posed by different activities. Please revise the text to consider an occupational exposure scenario to be evaluated for the EW:	2*
			Response – Will discuss with EPA and its partners which pathways will be quantitatively evaluated and how to develop those evaluations. The specific approach will be described in the CSM deliverable. Note that the netfishing scenario for the LDW is defined as an occupational scenario.	
105.	38	3.2.3.2.2	First sentence. The SRI/FS work plan is not the forum to draw conclusions about whether the net fishing exposure scenario is protective of other occupational scenarios. Please remove this sentence and change the discussion to indicate that an appropriate human-use survey will be implemented to establish contact frequency and magnitude of dermal exposure to sediment in EW.	1
			Response – The sentence will be removed. This topic will not be addressed in this level of detail in the Work Plan. An approach to evaluate dermal sediment exposure will be discussed with EPA and its partners and presented in the CSM and data gaps analysis deliverables.	
106.	38	3.2.3.2.2	Repair of pilings, piers, and bulkheads is not rare on EW. EPA has reviewed large repair projects in the last two years, as well as sampling events. Please eliminate references to conclusions regarding major exposure pathways, and instead discuss the process to be pursued to evaluate the relative significance of various exposure pathways.	2*
			Response – The draft Work Plan stated that the frequency of maintenance activities involving sediment exposure is expected to be very low. This statement will be removed. Conclusions regarding pathways will be removed. This topic will not be addressed in this level of detail in the Work Plan. Will discuss with EPA and its partners which pathways will be quantitatively evaluated and how to develop those evaluations. The selected approach will be described in the CSM deliverable.	
107.	38	3.2.3.2.3	The work plan must reflect that the current version of the tribal framework is still in draft form and that a final version will likely be released during the implementation of the work plan, if not sooner. Changes to seafood consumption rates and/or other parameters, if any, will need to be incorporated into the analyses. Please state at the time the human health risk assessment for EW is being developed, the most current version of the EPA tribal framework will be applied in consultation with the Muckleshoot and Suquamish Tribes. Also please remove conclusions made in the work plan that the Tulalip consumption rates seem appropriate for EW and that EW has limited current or future potential to support substantial shellfish harvest. This paragraph can only	2*

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			mention that the EPA tribal framework will be used to determine an appropriate seafood ingestion rate.	
			Response – A statement will be added to the Work Plan indicating that an updated version of the framework is expected soon. Discussion of specific application of the framework will not be included in the Work Plan. Specific details on the use of the tribal risk framework will be discussed further in the Human Health Risk Assessment Technical Memorandum.	
108.	38	3.2.3.2.3	Remove the last sentence of this paragraph on page 38, because the EPA tribal framework does not evaluate an appropriate site-use factor.	2*
			Response – Discussion of specific application of the framework will not be included in the Work Plan. Specific details on the use of the tribal risk framework will be discussed further in the Human Health Risk Assessment Technical Memorandum.	
109.	38	3.2.3.2.3	Some shellfish, notably <i>Macoma</i> sp, do well in fine-grained sediments (in fact, they are found often in heavy black anaerobic sulfurous muck where almost no other shellfish survive) that are spurned by other shellfish. If <i>Macoma</i> or other hardy species are also targeted by shellfish harvesters, potential exposures via shellfish consumption could be higher than suggested in this section. Please revise the text accordingly to reflect this.	2*
			Response – Further discussion with EPA will be required on this topic. Language will be added to the Work Plan indicating that a discussion of potential shellfish habitats and populations will be included in the CSM.	
110.	39	3.2.3.2.3	Please provide the full citation for Kissinger 2005. Also rephrase to state that this survey will be proposed for use during development of the Human Health Technical Memorandum.	1
			Response – Full citation will be provided. Survey will be considered in the development of the Human Health Memo.	
111.	39	3.2.3.2.3	The Suquamish or Muckleshoot Tribes have the right to ask for inclusion of a Suquamish or other alternate scenario as part of the risk assessment. EPA may then discuss its views on the appropriateness of the additional Tribal scenario. The Framework does not permit reduction of the overall seafood consumption rate if species are not present. Resource switching is assumed. The overall rate may be effectively reduced if a consumed species does not have a body burden of site-related contaminants. Please revise the text accordingly to reflect this.	2*
			Response – Discussion of specific application of the framework will not be included in the Work Plan. A statement will be added to the Work Plan indicating that specific details on the use of the tribal risk framework will be discussed further in the human health risk assessment technical memorandum.	
112.	39	3.2.3.2.3	Site use has been incorporated into the derivation of Tribal and API seafood consumption rates in that only Puget Sound and King County harvested seafood consumption were considered in developing consumption rates. Application of a site-use factor is inappropriate. Please remove	2*

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			references to consideration of a site-use factor.	
			Response – Discussion of specific application of tribal and API consumption rates to the EW will not be included in the Work Plan. A statement will be added to the Work Plan indicating that specific details on the use of the tribal risk framework and API consumption study will be discussed further in the human health risk assessment technical memorandum.	
113.	39	3.2.3.2.3	There are recreational seafood consumption surveys applicable to the LDW (e.g., Landolt et al. 1985, 1987, Pierce et al. 1981, McCallum 1985). A 1988 Tetrattech report developed seafood consumption rates suitable for risk analysis from this study. The rates included in the Tetrattech report far exceed 1 meal per month. There should be no characterization of 1 meal per month as a "recreational" consumption rate. Rather, an intake rate of 1 meal per month merely allows an individual to estimate their health risks based on this consumption rate. Please revise the text accordingly.	1
			Response – Text will be revised.	
114.	39-40	3.2.3.3	Please remove statements that separate scenarios for future land use will not be evaluated. Cleanup decisions are made under CERCLA authority based on reasonable future use. Please state that the evaluation of future uses will consider tribal treaty rights, redevelopment/expansion plans, and expected improvements related to remediation and source control in the LDW. Also the discussion of use of the CT scenario and combining the risks are more appropriate in the Human Health Risk section rather than in this section.	2
			Response – Statements with conclusions regarding current and future land use will be removed from the Work Plan. This issue will be discussed further in the CSM and human health risk assessment technical memorandum. Discussion of CT scenarios and combining risks will be removed and presented instead in the human health risk assessment technical memorandum.	
115.	40	3.3	Please discuss an investigation of epibenthic and benthic structure in the section on data gaps. Such information might be very useful in both the ERA and HHRA. For example, such information might provide some estimate of the productivity of the area for species that might be targeted by shellfish collecting. This information might be useful in uncertainty evaluation to put exposure and risk estimates from inputs defined by the tribal framework into some site-specific perspective.	2
			Response – The comment will be addressed in the CSM and data gaps analysis.	
116.	40	3.3	Please include a discussion of groundwater data gaps in this section, and emphasize that an attempt to identify significant upland contaminant sources will occur before major exploration of the uplands. One option to consider is to situate direct push transects adjacent to the waterway at a reasonable spacing, so as to intercept groundwater contaminated in the upland. This would provide confidence in plume identification and delineation, while avoiding the "groundwater characterization by wells" problem.	3

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			Response – Data gaps analysis will be performed for source control (including groundwater) as part of a separate analysis and will be submitted in a separate Source Control Data Gaps report. This approach is proposed to help expedite completing the data gaps analyses for most of the SRI/FS elements, and handle Source Control elements in a separate process. The Source Control Evaluation Approach Memo will lay out the approach and proposed deliverables for Source Control evaluation.	
117.	40	3.3	Please articulate that source control will be considered in the data gaps analysis.	3
			Response – While existing information on source control will be presented in the EISR, the data gaps analysis for source control issues will be conducted as part of the Source Control effort, and not as part of the data gaps analyses report. This approach is proposed to help expedite completing the data gaps analyses for most of the SRI/FS elements, and handle Source Control elements in a separate process. The Source Control Evaluation Approach Memo will layout the approach and proposed deliverables for Source Control evaluation. This may include a separate Data Gaps Analysis for Source Control.	
118.	40	3.3	It appears that data gaps identified from review of physical processes will be used with the sediment fate and transport study; but, as stated in the work plan, it also appears that a separate independent effort for the sediment fate and transport analysis will occur. Please describe how data gaps will be addressed for the sediment fate and transport analysis.	1
			Response – The Work Plan will be clarified to describe how data gaps analysis will be performed for sediment fate and transport analysis. Similar to Source Control evaluation, the Sediment Transport evaluation will use information compiled for the EISR, but will assess data gaps and determine need for additional field investigations and modeling as a separate deliverable from the Data Gaps Analyses report in order to expedite completing the main data gaps analyses for most of the SRI/FS elements.	
119.	40	3.3	Please add a specific section to discuss data gaps relative to MNR. It is likely that substantial portions of the EW will be designated for MNR, and the data gaps analysis should discuss data gaps relative to MNR so that appropriate MNR-related data can be collected during field investigations.	1
			Response – Data gaps relative to MNR will be recognized in the Work Plan.	
120.	40	3.3	The discussion of the data gaps analysis does not use the concept of exposure units that are typically defined and incorporated into quantitative human health (and ecological) risk assessments. The data gaps analysis should recognize the possibility that subareas of the EW may need to be evaluated separately, and that sufficient data to support these evaluations will be needed for such subareas. Exposure units are not necessarily "hot spots," so that higher densities of samples could be required for areas other than those with relatively higher levels of contamination. The key, from a risk assessment standpoint, is that the data set(s) should be representative for the entire EW and for each subarea (if more than one exposure unit is defined).	2*

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			Among other things, representative data adequately characterize areas of both higher and lower contamination within the EW and each smaller exposure unit. Please revise the text accordingly.	
			Response – The comment will be addressed in the CSM. The EWG considers it premature to assume that the EW will need to be broken up into smaller exposure units based on the relatively small size of the EW.	
121	41	3.3.1	Please articulate that sediment data will be evaluated against risk-based ACGs, and that bioaccumulation should be considered in developing risk-based ACGs.	2
			Response –Risk-based ACGs will be developed for the data gaps report and also presented in QAPPs.	
122.	41	3.3.2	Please articulate that tissue data will be evaluated against risk based ACGs.	2
			Response – Risk-based ACGs will be developed for the data gaps report and also presented in QAPPs.	
123.	41	3.3.2	Please articulate that PCB congener analysis in tissue and sediment samples are needed with regards to: 1) Adequacy of Aroclor data for characterization of total PCBs by comparison of total PCBs by congener and Aroclor analysis; 2) Characterization of PCB TEQ risks; and 3) Sediment to tissue bioaccumulation modeling.	2*
			Response – The comment will be addressed in the data gaps analysis. We propose an approach consistent with that used in the LDWG. Congener data will be necessary to verify the adequacy of the Aroclor sums and to characterize PCB TEQ risks. We do not agree that congener data is necessary for bioaccumulation modeling.	
124	41	3.3.2	The description of the tissue data analysis is inadequate as to how tissue types would be matched with exposure pathways, the ROCs that would be addressed, and how tissue types would be prepared for analysis. Sandpiper prey items may be addressed as part of the data gaps analysis. Please provide a rationale on the process of how tissues would be selected, the degree of replication (DQOs), and the COCs to be measured.	2
			Response – The comment will be addressed in the data gaps analysis.	
125.	41	3.3.2	Please include phthalate sampling as part of all fish, shellfish, and other biological sampling for East Waterway.	2
			Response – The comment will be addressed in the data gaps analysis.	
126.	41	3.3	Please provide a discussion that the Data Gaps Analysis Report will evaluate Physical Processes.	1
			Response – We will include text that indicates the Data Gaps Analysis will consider physical processes.	
127.	41	3.3.3	The SOW identifies a Sediment Transport QAPP in Task 3. Please verify that the Sediment Transport element of the Data Gaps Analysis Report will provide a work plan for the sediment	1

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			transport study that identifies study objectives, additional information to be collected (field activities or literature reviews, etc.), modeling to be completed (cite model to be used, data inputs, results presentation format, criteria for evaluating results, etc.), schedule, etc.	
			Response – Please note that the overall Sediment Transport Evaluation process is identified in Section 3.7. The data gaps analysis for sediment transport will be conducted in a separate deliverable from the Data Gaps Analyses Report. This deliverable is currently termed the Preliminary Draft Report, but will be re-named “Sediment Transport Evaluation Approach Memorandum” to be clearer as to the content of the report. Data gaps analyses and evaluation methodology will be discussed in the Sediment Transport Evaluation Approach Memorandum. Please also see response to comment no. 152.	
128.	41	3.3.3	Please clarify how the sediment transport evaluation will be integrated and coordinated with other data collection. Evaluating sediment transport separately could easily lead to additional data gaps that will delay the project schedule and/or limit the ability to adequately assess remedial alternatives.	1
			Response – The Work Plan will be revised to reflect the contents of the comment.	
129.	42	3.3.5	Please include DNR lease/easement/right-of-entry records as a data source to investigate structural and utility data.	1
			Response – These records will be included as a data source.	
130.	42	3.3.5	Please include WSDOT as a source of data for the structural and utility data gaps.	1
			Response – WSDOT will be included as a source of data for the structural and utility data gaps.	
131.	42	3.3.5	Please include a section or subsection that discusses an assessment of the presence/absence of debris.	1
			Response – A subsection will be included.	
132.	42	3.3.5	Please verify that the assessment will characterize the depth of the structural supports into the sediment.	2
			Response – The assessment will characterize the depth of the structural supports into the sediment where information is available.	
133.	42	3.3.6	Please verify that this section acknowledges the significant cruise ship usage of Terminal 30 and their impacts on waterway draft requirements.	3
			Response – Cruise ships are not expected to impact waterway draft requirements as the commercial container ships have deeper draft needs and will be the controlling factor. Reference to cruise ship use of the EW will be mentioned in the Work Plan.	
134.	42-43	3.3.6	Please include Tribal uses in this section, and add the Tribe to the group that will be coordinated	1

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			with regarding future uses of the Waterway.	
			Response – Text will be revised.	
135.	43	3.4	Last sentence of last paragraph: Please substitute text as follows: "and will utilize these ACGs as reach agreement with EPA regarding the appropriateness of these ACGs."	1
			Response – Text will be revised.	
136.	43	3.4	Please verify that all sampling events will commence with an EPA-approved QAPP, addressing all the QA elements required in the EPA/QA-R5 document, and an appropriately EPA-reviewed Field Sampling Plans and Laboratory SOPs and Initial Demonstration of Capabilities or MDL Studies.	1
			Response – Text will be revised.	
137.	43	3.4	Similar to earlier comment regarding DQOs. DQOs should be derived using the EPA 7-step process presented in <i>Guidance on Systematic Planning Using the Data Quality Objective Process (G-4)</i> [EPA February 2006]. Please state that here.	3
			Response – The Duwamish DQOs and DQO process will be utilized as much as possible to efficiently derive DQOs consistent with EPA Guidance. Guidance document will be cited in the work plan.	
138.	45	3.5	In order to save time during EPA review and data verification, please articulate that data reports will include the complete electronic raw data output generated during the chemical analysis of environmental samples, the chain-of-custody documentation, and the work sheet and supporting data for validation in a CD.	1
			Response – Text will be revised.	
139.	45	3.5	It's mentioned that data will be provided electronically. The timing for availability in an electronic format should be discussed in this section. Please verify that data will be made available to EPA and the trustees if requested immediately following validation. Options to accomplish this include posting on the EWG website with password access. Please mention that interpolation memo will be shared with the trustees.	3
			Response – We disagree with providing data immediately upon validation. Electronic data will be made available with data reports in order to allow sufficient time for EWG quality assurance and its own internal review of data. This data process is consistent with the LDW process.	
140.	45	3.5	Please include photographs (e.g., sediment cores) in data reports.	1
			Response – Photographs of cores will be included in data reports.	
141.	46	3.6	Please explain the process through which COPCs will be identified and coordinated with COPCs identified for the LDW (specifically address dioxin/furans).	2

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			Response – This topic will not be addressed in this level of detail in the Work Plan. The comment will be addressed in the data gaps analysis and the RATM. Text will be added to the Work Plan.	
142.	46	3.6	Information discussed earlier (under section 3.2.3.2) under the human health CSM seems more appropriate for this section and should be moved from that earlier section. The CSM is meant to be a graphical representation with brief accompanying narrative. Development of the CSM should be presented in the earlier section, while the discussion about how and when risk parameters will be developed should be moved to this section.	4
			Response – The development of relevant receptors and pathways of exposure will be presented in the CSM in order to facilitate the data gaps analysis and development of sampling plans. The risk parameters will also be discussed in the RATM.	
143.	46	3.6.1	This section introduces a phasing of the risk assessment into screening and baseline risk assessments, but does not identify characteristics that will distinguish them. Please describe the process and expand on the purpose of the screening and baseline risk assessments, explaining the difference between the two. Also, please explain the screening risk assessment in the context of the risk assessment technical memorandum.	3
			Response – The text in the Work Plan was confusing. We do not plan to conduct a screening level risk assessment. The risk assessment technical memoranda will detail all the exposure parameters and methodology for the risk assessments prior to the completion of the baseline risk assessment. In addition, the problem formulation section of the risk assessment will provide the COPC screening for the risk assessment. References to a screening level risk assessment will be removed from the Work Plan. Text from this response will be included in the Work Plan.	
144.	46	3.6.1.1	"..., the process to be used in selecting toxicity values will be presented." Please describe this process here in the work plan, particularly on any planned use of surrogate species for the wildlife ROC, and any intent to use uncertainty factors for toxicity test species of varying phylogenetic distance. We are going to have lots to discuss for the RATM with them. We need to do our best to keep this type of stuff consistent with LDW.	2
			Response – This comment will be addressed in the RATM.	
145.	46-48	3.6.1.2	The statements and assumptions regarding tribal exposure pathways and application of the tribal risk framework guidance are premature and do not reflect the need for consultation with the appropriate tribes or the tribal risk framework approach being taken for the LDW. Please add a statement that the approach and assumptions used in the EW will be consistent with those used for the LDW.	2*
			Response – References to assumptions regarding tribal exposure pathways and specific application of the tribal risk framework will be removed. A sentence will be added to the Work Plan stating that the use of the tribal risk framework document and consistency with	

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			<i>the LDW will be discussed further with EPA and its partners and presented in the human health risk assessment technical memorandum.</i>	
146.	47	3.6.2	Footnote 5: If dredging is conducted in the future to deepen the EW, current subsurface sediments may be exposed. Please verify that the work plan addresses this concern.	1
			<i>Response – Text will be revised.</i>	
147.	47	3.6.2	The ecological risk assessment must follow the Superfund ERA guidance (EPA/540/R-97/006) or discuss when it is appropriate not to use the ERA guidance. Examples of where guidance applies that is not specified in the work plan includes: defined problem formulation or scientific/management decision points. Please address these examples in the work plan.	1
			<i>Response – Text will be revised</i>	
148.	47	3.6.2	The document states that the approach and assumptions used in the EW Ecological Risk Assessment will be consistent with those of the LDW for elements of the EW CSM that are consistent with the LDW CSM. The EW assessment will not be strictly limited to the LDW ERA approach and assumptions. Until specifics are provided on the “assumptions” and “approach” for the ERA, it cannot be determined what is appropriate for the ERA on the EW, even if certain elements were approved for the LDW Superfund site. Please describe a process in this section to evaluate whether the LDW ERA approach and assumptions may be used as starting points.	2
			<i>Response – The comment will be addressed in the CSM and the RATM. The workplan will describe a process to evaluate whether the LDW ERA approach and assumptions may be used as starting points.</i>	
149.	47	3.6.3	Please articulate that although subsequent analysis may establish that water risks are insignificant, they will be included for risk communication purposes.	2*
			<i>Response – We will discuss with EPA which pathways will be quantitatively evaluated. A sentence will added to the WP indicating that a discussion of the pathways to be evaluated in the risk assessment will be presented in the CSM deliverable. .</i>	
150.	47	3.6.3	Please include a discussion on level of detail and expected content of the HHRA tech memo. Some general topics/headings identified now will reduce or eliminate subsequent rounds of comment and revision. Some topics that might be considered include definition of exposure units, development of representative datasets, handling of NDs for exposure-point concentration calculations, and development of BSAFs. The work plan should identify these issues; however, any detailed discussion belongs in the tech memo and/or the subsequent draft risk assessment.	1
			<i>Response – Additional text identifying relevant topics for the HHRA tech memo will be provided in the Work Plan.</i>	
151.	48	3.7	Please clarify how the sediment transport evaluation will be integrated and coordinated with other data collection efforts. Separate and independent sediment transport evaluation could easily lead	1*

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			to additional data gaps that will delay the project schedule and/or limit the ability to adequately assess remedial alternatives.	
			Response – The revised work plan will clarify that we intend to try to integrate sediment transport evaluation into the overall data gaps collection effort. Please note that the EWG has called out the sediment transport evaluation effort as a standalone effort in order to expedite the overall schedule, and we believe that this approach will best meet the needs for the SRI/FS.	
152.	48	3.7	Please elaborate on the scope of the Sediment Transport Evaluation relative to the third to last bullet of Section 5 that says the sediment transport evaluation will not include fate and transport modeling and the LDW modeling work will be used. This should be discussed in Section 3.7, including an overview of the LDW modeling, key conclusions, applicability to EW, data needs relative to MNR and other remedial options, etc. EPA has not determined whether limiting the scope of the Sediment Transport Evaluation to physical processes only is acceptable. At a minimum, some discussion of chemical fate and transport is appropriate, along with justification of why additional work related to chemical fate and transport is not needed.	3
			Response – EPA has misunderstood the third to last bullet. We are not stating that no fate and transport modeling will take place; only that we have assumed for scheduling purposes that a brand new model (outside of the existing model for LDW) will not be developed. Our assumption is that the existing LDW model will be modified for EW use. We will delete the third to last bullet to avoid confusion. Information on the LDW modeling is planned to be discussed in the EISR, while data gaps analyses and evaluation approach will be summarized in the Preliminary Draft Report. For clarity sake, we will rename the Preliminary Draft Report to the Sediment Transport Evaluation Approach Memorandum, which will include the evaluation approach, data gaps analyses, and recommendations for data collection and studies/modeling.	
153.	49	3.7.1	Please provide more information to explain the "tiered" approach that will meet the listed goals in this section. Why is a tiered approach needed?	1
			Response –The word "tiered" will be deleted.	
154.	49	3.7.2	Please provide a more detailed discussion of the modeling work performed on the LDW (both by King County and QEA in consultation with the Sediment Transport Modeling group). This discussion does not need to be extensive (in this document), but the current work plan leaves the impression that only King County has an applicable model, which is incorrect.	1
			Response – The revised work plan will include an expanded summary of modeling work performed on the LDW. A detailed summary will be described in the EISR.	
155.	50	3.7.3	Please link this section to Section 3.3, if this is indeed the purpose. If not, then please provide further clarification in this section.	1

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			Response – Additional clarification will be provided in Section 3.7.3. to indicate that data gaps analysis for sediment transport will be discussed in a separate document than the Data Gaps Analysis Report.	
156.	50	3.7.3	Please add language that indicates that additional studies will not be limited to propwash.	3
			Response – Section 3.7.3 does not refer to propwash and we do not consider it necessary to specifically focus on this one topic in this section.	
157.	50	3.7.4	It is unclear whether the approach specified in the EPA guidance document is sufficient to assess propwash. Please provide more detail, or eliminate the reference to make the approach more flexible.	1
			Response – The reference will be eliminated. Please note that the intent was to provide an example of an EPA accepted approach for assessing a potential data gap.	
158.	51	3.7.6	"The preliminary draft report will only include sections...." Please change this reference to indicate that any report evaluating existing data will include that data in the report.	3
			Response – Comment noted. Based on our initial discussions with EPA on the draft Work Plan and in follow-up discussion with EPA to review EPA's comments on the draft Work Plan, our understanding is that EPA prefers to include all existing information in the EISR, and not have existing information summarized in separate reports. The Work Plan will be updated to state that all existing data will be included in the EISR, and that data gaps will be evaluated in subsequent deliverables.	
159.	51	3.7.6	It is not clear whether the project timeline accounts for QAPPs/EPA review/data collection for additional data needs identified for the sediment transport evaluation report. Please identify how the proposed timeline accounts for this potential need.	1
			Response – The timeline and the interrelationship of the review/data collection process will be clarified. Because there is more uncertainty about the sediment evaluation process as compared to the general SRI/FS process, the project schedule is by necessity more vague.	
160.	52	3.8	Please substitute the text provided in the attached file for the current text in section 3.8.	1
			Response – We will work with EPA to revise the text appropriately.	
161.	52	3.9	Please add "chemicals of concern" as a separate bullet in this section.	1
			Response – Comment accepted.	
162..	52	3.9	"The SRI report shall synthesize the results of sediment, surface water, and tissue data into a complete evaluation of the nature and extent..." Please include groundwater and seeps in this list.	1
			Response – Comment accepted.	
163.	52	3.9	Please articulate that the Supplemental RI Report will include a discussion of data limitations and	3

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			preliminary RAOs.	
			Response – RAOs should be developed under the FS; this approach is consistent with EPA's SOW. The SRI report will contain a summary of RAOs.	
164.	53	3.9	Please add additional bullets clearly identifying the conclusions that will be presented in the SRI, such as the list of COPCs for the EW and corresponding completed exposure pathways, areas where the COPCs exceed risk-based levels, etc. Please add that interim actions to address substantial hot spots will be evaluated with EPA.	1*
			Response – Additional bullets will be added for appropriate conclusions to be presented in the SRI. Areas where the COPCs exceed risk-based levels will not be completed for the SRI but will be discussed in the FS.	
165.	53	3.9	Last Bullet: The development of risk-based sediment concentrations and background concentrations for certain contaminants of potential concern should be developed in the Feasibility Study instead of the Remedial Investigation. That way, they can be developed in the context of defined Remedial Action Objectives (RAOs).	1
			Response – The last bullet item will be moved to the FS.	
166.	53	3.9	Please explain how risk-based sediment concentrations and background concentration will be identified and coordinated with those developed for the LDW.	2
			Response – The comment will be addressed in the RATM.	
167.	54	4	The title of this section is misleading, because it seems to indicate that RAOs and remedial alternatives memoranda and associated work will be developed under the Feasibility Study. Please clarify by either revising the title for Section 4 (to differentiate between RAOs, remedial alternatives, and the feasibility study), or by adding an independent section of the workplan for RAOs, etc., which would immediately precede the Feasibility Study section.	1
			Response – The title will be changed to "Feasibility Study Activities," and "FS" will be changed to "FS Report."	
168.	54	4	Second Bullet: This bullet mentions estimating the volume and areas of sediments above Remedial Action Levels (RALs). Please clarify where the Remedial Action Levels will be evaluated and discussed.	1
			Response – RALs will be evaluated as part of Section 4.2.5., Preliminary Remediation Goals. The Work Plan Section 4.2.5 will add text to clarify.	
169.	54	4	Please add ARARs to the first bullet.	1
			Response – ARARs will be added to the first bullet in Section 4.	
170.	54	4.1	First paragraph: Please define "site management goals" (SMGs) and how they differ from	1

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			Remedial Action Objectives (RAOs) and explain how they relate to Superfund RI/FS Guidance and why both are needed with the SRI/FS.	
			Response – We will delete reference to SMGs as separate from RAOs. SMGs will be a section in the RAO memorandum (and will be defined in the RAO memo) and will be used to help develop the RAOs.	
171.	54	4.1	"The purpose for developing preliminary SMGs and RAOs, and screening of remedial alternatives and disposal sites is to quickly eliminate infeasible remedial actions to help focus both the SRI and FS work." Please provide the criteria that deem an action "infeasible." And for clarity, please substitute the term "not practicable" for "infeasible."	2
			Response – The criteria that will be used to deem an alternative not practicable will be discussed in the Remedial Alternatives Screening Memorandum. We will substitute the term "not practicable" for "infeasible" in the Work Plan.	
172	55	4.1.2	Please indicate that the FS will include an evaluation of treatment of principal threat materials identified by EPA and potential beneficial reuse.	1
			Response – Treatment as a response for principal threat materials is referenced in the description of the Remedial Alternatives Screening Memorandum. Treatment alternatives that pass this initial screening as well as beneficial reuse will be more fully evaluated in the FS. Beneficial reuse will also be evaluated in the Disposal Site Alternatives Evaluation.	
173	55	4.1.1	Please articulate that the SMGs and RAOs Memoranda will define both SMGs and RAOs and explain the difference between the two and why both are needed.	1
			Response – Reference to SMGs will be removed from the Work Plan; see response to comment No. 170.	
174	55	4.1.1	Please articulate that SMGs, RAOs, and PRGs will be consistent with the LDW as appropriate, and define the process to make this determination.	1*
			Response – SMGs for the East Waterway may be significantly different due to the very different nature of commercial, recreational, and industrial use of the LDW vs. the EW. RAOs and PRGs will be consistent with the LDW where appropriate. We will revise the text to reflect this understanding. As noted in response to comment No. 170, reference to SMGs will be removed from the Work Plan.	
175	55	4.1.1	For consistency with the EW Statement of Work, please articulate that the RAOs Memorandum will identify areas and volumes of contaminated sediments to which general response actions, other than early actions, may apply, taking into account requirements for protectiveness as identified in the RAOs. The chemical and physical characterization of the EW will also be taken into account.	3
			Response – Ideally, the areas and volumes of contaminated sediments would be defined in time to include in the RAOs Memorandum. However, due to the timing of identifying RAOs	

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			<i>early in the process in order to expedite the overall schedule, final areas and volumes likely will not be defined. We will use preliminary estimates of areas and volumes in the RAOs Memorandum to provide an order of magnitude assessment.</i>	
176	56	4.1.2	Step 6: Please provide more detail on how "lowest order of magnitude cost" will be used in this analysis. As written, it is not clear what cutoff will be used to carry forward alternatives.	1
			<i>Response – The screening criteria for eliminating potential disposal sites will be developed with EPA review. The screening process description was intended to represent anticipated steps in the process but not identify the specific criteria under which disposal sites would be assessed and screened. Step 6 will be modified to state, "All candidate disposal alternatives that pass the EPA approved screening criteria will be carried forward...."</i>	
177	56	4.1.2	Please articulate that the FS will examine the potential for in-water beneficial re-use of sediment (PSDDA-suitable) proposed for dredging incidental to the remedial action. Beneficial uses in the upland environment should also be considered, if applicable.	1*
			<i>Response – Beneficial re-use of SMS suitable dredged material from the EW will be added to the potential disposal options for evaluation. Please note that beneficial re-use of dredged material either in-water or upland in the State of Washington is typically based on suitability per the State Management Standards, rather than through the Dredged Material Management Program.</i>	
178.	56	4.1.2	Please explain the basis for stating that potential sites of disposal must be within a 5-mile radius of the EW to be considered a reasonable option, or clarify that it is a guideline. Disposal sites should be considered based upon their ability to meet project requirements and reasonability of costs.	1
			<i>Response – The sentence mentions a 5-mile radius as an example and does not suggest a 5-mile radius as a criterion. Disposal site screening criteria will be developed by the EWG and reviewed and approved by EPA. The 5-mile radius is considered a guideline; ultimately the project requirements must be met at reasonable cost. The Work Plan will be updated accordingly.</i>	
179.	57	4.1.3	To meet MTCA ARARs, please include a discussion of the baseline remedial alternative (or how consideration of CERCLA criteria will address this MTCA requirement).	2
			<i>Response –MTCA will be identified as an ARAR in the FS Report. This comment will be addressed in the Remedial Alternatives Screening Memorandum.</i>	
180.	57.	4.1.3	Please explain that the alternative will meet the threshold requirements of protection of human health and the environment.	1
			<i>Response – Text consistent with this comment will be inserted.</i>	
181.	57	4.1.3	For clarity, please eliminate the term "universe" and use similar wording as in 4.1.2 opening paragraph.	1
			<i>Response – The revision will be made.</i>	

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182.	57	4.1.3	For clarity and consistency within the document, Item 3 should state that alternatives that are not practicable will be eliminated. Evaluation of political and other critical considerations are beyond the scope of the FS.	1
			Response – Item 3 will be revised.	
183.	58	4.1.3	This section should acknowledge the future Alaska Way Viaduct Replacement project as having a significant impact on some remedial alternatives, particularly ones involving upland activities. The viaduct project is currently anticipated to start in 2009 and is immediately adjacent to the EW.	3
			Response – We believe it is premature to consider the impact of a specific adjacent project in the Work Plan. Potential impacts between adjacent projects will be considered in the FS.	
184.	58	4.2	It is possible that human-health-risk-based RAOs will not be attainable for certain contaminants in EW sediments. The LDW FS process may include risk-based remediation goals as well as RAOs. Please include consideration in the text to including risk-based remediation goals in the EW FS.	3
			Response – The comment is unclear as written. There are 4 RAOs for LDW and each has PRGs associated with them for the risk drivers. These PRGs are based on the higher of risk-based thresholds, background or PQL. If a risk-based threshold is not attainable (below background), then background is the PRG.	
185.	58	4.2	Please identify where the ARARs analysis will be included in the FS.	1
			Response –Text will be added to include ARARs between section 4.2.3 and 4.2.4 as a subsection of the FS.	
186.	59	4.2.5	Please clarify whether this section will include the development of RALs. It is not clear how an evaluation of alternatives can be conducted until RALs are established.	1
			Response – Remedial Action Levels (RALs) will be conceptually discussed in the RAOs Memorandum, and will be developed as part of the development of PRGs, in this section, in order to conduct the detailed evaluation of alternatives. The Work Plan will be updated accordingly.	
187.	59	4.2.5	Please articulate that SMGs, RAOs, and PRGs will be consistent with the LDW as appropriate, and define the process to make this determination.	1
			Response - See response to #174	
188.	59	4.2.6	Please indicate that a discussion of how the detailed evaluation of alternatives meets MTCA disproportionate cost analysis will be provided, or provide such a discussion in the work plan.	2
			Response – Further discussion with EPA is needed to define the detailed alternatives analyses. Information will be provided in the Remedial Alternatives Screening Memorandum.	
189.	59-60	4.2.6	Please cite a reference or EPA guidance document in the feasibility study section for the nine	1

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			criteria listed.	
			Response – The EPA guidance document will be cited.	
190.	60	4.2.6	Criteria 8: Multiple state agencies (WA Dept of Fish and Wildlife and State Dept of Health, in addition to those cited) will determine state acceptance of the chosen remedial alternative. Please do not list specific state agencies, and revise the text to indicate that State acceptance will be based on feedback from state agencies. Please remove the statement that evaluations of past experience and limited state guidance will suffice.	1
			Response – The suggested revisions will be made.	
191.	61	4.2.9	Please add to the bullet list of FS appendices: MNR analyses, Cap design analysis (including preliminary fate and transport modeling) for any sediment caps, and CDF studies (including geotechnical and seismic stability analyses, fate and transport modeling), if applicable.	1
			Response – These items will be added to the bullet list as potential FS appendices.	
192.	62	5	Second bullet in second group of bullets: There is a high likelihood of substantial comments. Please delete the statement that implies that any substantial comments will delay the schedule.	3
			Response – We disagree that this schedule caveat should be deleted. We did not intend to indicate that the EWG will not address substantial comments, but that the schedule is based on moderate revisions to comments. Where more than moderate revisions are necessary, EWG and EPA will renegotiate the schedule. This language will be added to the Workplan.	
193	62	5	The interface between the field data collection efforts and the risk assessment technical memos is not clear. Is there any intent to use the newly collected data in the risk assessments? If there is, then the schedule needs to be adjusted to allow for this. If not, please explain why not.	1
			Response – The RATM will use newly collected data. The schedule will be revisited to clarify this connection.	
194	62	5	Please state whether data from the early tasks of the SRI/FS will be used to develop the memorandums described in this section. Also, please articulate the milestones that will need to be met in order to stay on schedule as well as the key assumptions needed in developing the schedule.	1
			Response – These requests will be addressed in the revised Work Plan. Please note key assumptions in the project schedule are already discussed in Section 5.	
195	63	5	Second to last bullet: The Sediment Transport Evaluation and Source Control Evaluation are project elements identified in the SOW and are not subject to a separate process as implied in the second to last bullet. Please revise.	1
			Response – Comment noted. This bullet will be removed. We did not intend to imply that the Sediment Transport Evaluation and Source Control Evaluation are not part of the formal	

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			<i>SOW, but rather that both of these studies have been called out as discrete elements of the SRI/FS that will be conducted on their own timelines in order to ensure that other parts of the SRI/FS do not get delayed by these two elements.</i>	
196	63	5	Please define how data needs identified from the data gaps task (or results from other schedule-dependent tasks) will be integrated with or linked to data needs identified in the source control and sediment transport evaluations.	1
			<i>Response – We will add text to clarify how data gap needs from sediment transport and source control evaluation will be integrated with general data gaps collection.</i>	
197	64	Fig 5-1	Please identify and highlight the critical path on the schedule and evaluate Tasks on the critical path where duration can be reduced.	1*
			<i>Response – Because the project schedule has many concurrent activities, the critical path has many elements. Critical path elements consist of each draft and final deliverable and any associated EPA reviews. The project schedule is currently built upon the intent to issue a Record of Decision (ROD) by March 2010. Therefore, the EWG does not consider there to be any float available to reduce duration of tasks on the critical path.</i>	
198	64	Fig 5-1	The schedule currently shows that the RAO memorandum will be produced before the risk assessments. Please articulate that the RAO memorandum will be produced after the risk assessment (or drafts) are complete, so that the remedial action will protect pathways and receptors.	3
			<i>Response – The RAO Memorandum will be developed prior to the Risk Assessment Technical Memoranda to define preliminary RAOs and inform the development of potential preliminary remedial alternatives. The preliminary remedial alternatives will be used to help identify data needed for the FS, which will be collected, to the extent possible, as part of field data collection to resolve data needs for the SRI. It is anticipated that the RAOs will be refined throughout the data collection and evaluation phases of the project, including following completion of the HHRA and ERA. RAOs will be finalized in the FS Report.</i>	
199.	64	Fig 5-1	The timeline does not allow for sufficient review periods for EPA review. EPA will allocate a portion of their review time for stakeholder review. Please add a foot note that states the schedule will be updated regularly in coordination with EPA	1
			<i>Response – The footnote will be added.</i>	
200.	64	Fig 5-1	There is currently no review time for the source control approach memorandum (line 40). Please add.	1
			<i>Response – Review time for the source control approach memorandum will be added.</i>	
201.	64	Fig 5-1	Please deliver the schedule in Microsoft Project format.	1
			<i>Response – Comment accepted.</i>	

Comment No.	Page No.	Section No.	Comment	Category
202.	64	Fig 5-1	Please change the deadlines to a larger font so that these dates can be read more easily.	1
			Response – Comment noted. We will try to increase font size.	
203.	64	Fig 5-1	Line 23: Please clarify the relationship and timing of the draft and final ERA and data collection and data reports. Final data reports are not due until after the final risk assessment. Please explain how this will allow for data to be used in the risk assessment.	1
			Response – Clarification will be provided.	
204.	64	Fig 5-1	Line 60: Please include an EPA review period after the final ERA 9/19/08 before the review period of the RI that starts 2/20/09.	1
			Response – In the revised schedule, the final Risk Assessments and draft SRI report are due the same day. An EPA review period is included under the SRI task, but will be used to review the Risk Assessments and SRI reports concurrently.	
205.	64	Fig 5-1	Schedule. Please explain why there are 30 days between finalizing the Data Gap Analysis and start of QAPP preparation.	1
			Response – In the revised schedule, work on the QAPPs will begin prior to final submittal of the Data Gap Analysis Report. The final Data Gaps Analysis Report will be approved prior to draft submittal of the QAPPs.	
206.	64	Fig 5-1	Performing the data gaps analysis and the sediment transport evaluation concurrently will make it impossible for the data gaps analysis to lead the sediment transport work. Please clarify the approach and schedule relative to Section 3.3.3 first sentence that says the need to conduct additional studies for sediment transport processes depends on the results from the data gaps analysis. Please add one or more additional bars for source control activities after the Final Report. The nature of these activities may be "to be determined", but a placeholder should be indicated on the schedule. Please clarify how the results in the Data Reports will be used in the sediment transport evaluation if the two are completed concurrently.	1*
			Response –EPA has misunderstood the schedule. In the revised schedule, line 44, Draft Approach Memo and Data Gaps under the sediment transport evaluation in the schedule summarizes the initial review of existing information and data gaps analysis for sediment transport (See Section 3.7.6) and would be submitted to EPA as a preliminary draft. The Draft Approach Memo does not evaluate sediment transport. Subsequent data collection efforts, analysis, studies and/or modeling that will be required would then be summarized in the Draft and Final Evaluation Reports. We will clarify that sediment transport evaluation depends upon the data gaps analysis for sediment transport, which is summarized in the Draft Approach Memo.	
207.	65	Table 6-1	Please add Kym Takasaki, USACE to Table 6-1.	1

Comment No.	Page No.	Section No.	Comment	Category
			Response – Comment accepted.	
208.	67	Table 6-1	Please identify Peter Leon under Regulatory Oversight.	1
			Response – Comment accepted.	
209.	67	6.1	Please add that GIS shapefiles will shared with EPA.	1
			Response – Comment accepted.	
210.	68	6.2	Please add that upon request by EPA, EWG will participate in stakeholder/trustee meetings that are not open to the public.	1
			Response – Comment accepted.	
211.	68	6.3	The Source Control Evaluation is a project element identified in the SOW and is a required submittal. Please clarify what is meant by an "informal submittal."	1
			Please clarify that a Sediment Transport Evaluation Approach Memorandum will be submitted to EPA for approval. This is particularly important since the schedule indicates the evaluation will be performed concurrently with the data gaps analysis.	1
			Response – Both clarifications will be provided in the revised work plan. The Preliminary Draft Report (for Sediment Transport) is essentially a Sediment Transport Evaluation workplan. As discussed in response to comment no. 127, the Preliminary Draft Report will be renamed to Sediment Transport Evaluation Approach Memorandum.	

Category Definitions:

1. EWG accepts comment(s) and will incorporate into the Work Plan.
- 1*. EWG partially accepts or disagrees with comment(s) but will incorporate into the Work Plan.
2. EWG accepts comment(s) but will address the comment(s) in future deliverable(s).
- 2*. EWG partially accepts or disagrees with comment(s) but will address the comment(s) in future deliverable(s).
3. EWG disagrees with the comment(s) and has provided an explanation in the response to comments.
4. EWG needs further clarification of the comment(s) or further discussion with EPA in order to respond.